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ABSTRACT

Imitation in the speech of the child serves at least three functions in the development of linguistic competence. Imitation provides auditory feedback for phonological and morpho-syntactic accuracy, produces a model for verification and/or clarification by speakers, and "makes time" for the processing and acquisition of information. Beyond these functions, however, imitation of the sibling model is different from imitation of the adult model. The second child is provided with a model of speech act behavior appropriate not only for the situation at hand, but for the child participant. Children imitate linguistic forms they do not possess, apparently with the confidence that they want the same result as they see their models obtain. For second children, imitation is oriented more toward achievement of the same goal, and overall, it results in less direct linguistic experience for them. They acquire features of language behavior before mastering those of linguistic form, thereby appearing to reach a stage of language competence earlier than does the first-born. (Author/CFM)

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SIBLING INTERVENTION IN FIRST LANGUAGE ACQUISITION: A CASE STUDY*

J. Anne Montgomery

This paper focuses on two aspects of natural language acquisition: the spontaneous imitation of an utterance by a language learner, and the role of the elder sibling as a provider of model utterances. Imitation is discussed not so much as leading to the acquisition of lexical and syntactic form, which is documented elsewhere, but as a complex act of language acquisition behavior in the process of which the acoustic signal is tested for phonological accuracy and presented for verification and clarification. Further, it is suggested that the act of imitation serves to "make time" in the same way that "time" is made in the speech of adults as they process information from the environment.

The phenomenon of language behavior defined as imitation is known to be a major tactic for a significant number of children in the acquisition of language skill. There co-exist two major, quietly contradictory statements on the process of imitation in children. The Piagetian view has children first employing sensorimotor imitation of perceived models, then switching to the process of imaging a model prior to actual representation of it (Piaget 1962). On the other hand, in Paul Guillaume Imitation in Children (1968), the child is described not as imaging representation of a model prior to producing it, but rather as using his own largely unspecified

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means of achieving the same result as did the model. We return to these two points of view later in the discussion, finding more support from the present data for the Guillaume interpretation than for that of Piaget.

In keeping with much contemporary analysis of adult language, recent investigations of child language imitation have generally focused on feature and form of the child's vocalization, and this after an adult model. Fraser, Bellugi and Brown (1963) determined that production without evidence of understanding is comparatively more advanced than correct production of contrasting features in sentences describing pictures. This suggests that imitation precedes production of linguistic forms.

Two studies of imitation, those by Ervin-Tripp (1964) and by Kemp and Dale (1973), found that when comparing word order and grammatical features in imitative and spontaneous speech, imitative productions were not significantly more advanced in form than were the spontaneous productions, i.e., they could be accounted for by the same rules. This suggests that imitation is keyed to the already acquired linguistic forms and structures. Leonard and Kaplan (1976) in testing the acquisition of new lexical items found that children who acquired the experimental test words did not necessarily use them imitatively first. We are reminded not so much of the chance of finding contradictory results in language research as of the great variance among children in the strategy and

progress in the acquisition of language.

The study "Imitation in language development: if, when, and why" by Bloom, Hood, and Lightbrown (1974) investigates in depth the relationship between imitative and spontaneous utterances in the acquisition of language by five first-born children. In comparing the two types of utterances as to features of semantic and syntactic structure, Bloom found that "lexical and grammatical imitation in the children's speech tends to be an index of learning." Bloom et al. also concluded that imitation is a selective process, never a random one in the child who imitates, and further, that there is evidence of, in Bloom's words, "the active interaction of the child in (his own) language development." This last observation figures critically in the present study as it brings into view the whole behavioral speech act of the child, not just the structure of the perceived utterance. It opens the door to the speech act approach (term as used in Bruner 1975) for the study of imitation in the acquisition of language.

This present study departs from the procedure used in the above studies by concentrating solely on the imitations produced by the child after the model of an elder sibling. In an informal survey undertaken to locate sibling sets of children for participation in this study, parents invariably ranked their subsequently born children as more advanced in language acquisition for their age than had been the first-born at an equivalent age. They attributed this to the presence of the elder (but near in age) sibling in the home

environment. This was the case with the pair used in this study. As both children are also subjects of a longitudinal study, it is possible to look at the recorded language of both children at the age of three. The family environment has changed so as to make a close comparison not truly a valid one. However, parental estimations of the advanced level of acquisition of the second child are not verified in the data. In the analysis of imitation data it is found that the child who imitates after the sibling is indeed making a great number of significant and situationally appropriate remarks, thereby giving the illusory impression of advanced competence. Parental observations of this sort are totally at odds with the conclusions in the scant literature on the affect of siblings on language development--all of which give the advantage, both early and long-range to first-born and only children.

Studies of sibling influence on child language have appeared sporadically in the literature. In 1932 Day measured the development of language in twins by the degree of comprehensibility of their utterances. This was followed in 1937 with the extended study by Davis, The development of linguistic skills in twins, singletons with siblings, and only children from age five to ten years. Based on such criteria as perfect articulation, incidence of substitution of d for th, w for r, and t/th for s; mean number of words per remark; mean number of different words, of infinitives, of auxiliary verbs and mean number of errors per 1000 words, (including the incidence of slang per 1000 words) Davis found only children to be "definitely superior to children

with siblings in every phase of linguistic skill." Singletons with siblings were also somewhat superior to twins. Writing in 1957, Morley noted that the onset of language for first-born and only children generally precedes onset for subsequent children of the same family. Further, the incidence of persistent speech defects among subsequently born children is significantly greater--twice that among first-born and only children. When tested as adults for verbal achievement using the scores of the National Merit Scholarship examination, only children and the first-born scored highest (Breland 1974).

The sibling relationship has been explored in the literature of psychology (Rosenberg & Sutton-Smith 1966, Cicirelli 1974). Of particular interest to this study of language development are studies on the role of the older sibling as teacher, as in Cicirelli (1972). Here it is noted that older female siblings are more effective teachers than are male siblings or non-sibling females.

Bernstein (1972) looks closely at language among siblings and in particular at the development of language in the older female siblings of working class positional families:

> Thus girls, especially older girls in such families, are likely to be person-oriented and to have to rely upon forms of control based upon linguistically elaborated meanings rather than upon physical coercion. Finally, they are placed in a situation involving a variety of role and code switching, e.g., girl-girl, girl-boy, girl controlling girls, girl controlling boys, girl mediating between parents and other sibs. These factors are likely to develop the girl's orientation toward a more differentiated, more individualized use of language.

Bernstein's cautionary note is well taken as to the dangers of the elicitation technique creating contexts for girls in which they "can demonstrate a socially promoted superiority" in certain language features. In attempting to avoid elicitation bias in the data collection for this study, recordings were made of natural speech without the use of any intentional control structures.

PROCEDURE

A pair of female siblings was chosen as quite possibly the most productive when compared to other sibling sets. (Data collection on male-male, and mixed sets of siblings is in progress for correlation with this study.) The girls, both subjects of on-going longitudinal studies, were Janet, age 2;5 and Jennifer, 7;7 at the time of the intensive collection of data. This data was recorded over a period of six weeks, four two-hour sessions, and one 30 hour session. All sessions were at the children's home, home of the investigator or in public locations familiar to both children. Public locations include McDonald's Restaurant, a grocery store, and driving in a car. Recordings were made with a small cassette recorder using the self-contained microphone.

Complete transcripts of the clearly audible portions of the entire long session were made with the aid of a graduate assistant; samples were transcribed from the shorter sessions. Approximately 8,000 utterances were transcribed. Of this number 15% were produced by Janet, the younger child. Mean length of utterance for her at this time was 1.5, with an

upward bound of 6 in spontaneous speech.

Janet is obviously a child who imitates frequently as approximately 33% of her utterances at this time, when in the presence of the sibling are imitations. Samples of these imitations were analyzed for pattern, then the child's entire verbal output as transcribed was coded into three speech act modes: the social, the intellectual, and the affective. This typology is based on the Bernstein categories for description of events in the environment which have significance in respect to restricted and elaborated codes in adult speech. While restricted and elaborated codes are not considered here, the data is viewed from the point of view of competent adult language behavior. As modified for use here, the following criteria were met:

affective - expressive utterances directed at the person or behavior of another, including direct commands, question-type commands, cries and exclamations fitting the description of "affective",

social - fixed phrases taught as such, largely culturally determined items of courtesy code and greetings,

intellectual - pragmatic, emotionally neutral utterances, including questions to elicit verbal output, answers to questions, comments on state of objects, persons, non-other directed exclamations, judgmental exclamations.

Utterances marked as in the affective, social, and intellectual modes were further coded into imitations, entirely novel utterances, novel utterances using a conversational theme

word introduced within the previous ten utterances, and yes/no type answers to questions. The imitations were further categorized as to morpho-syntactic representation in relation to the assumed model utterance as follows:

1) repetition, exact repetition of the model:

sibling model: here we go again
Janet: /hɨ gow gɨm/

2) reduction, same syllables/ morphemes, in same order only fewer than the model:

sibling model: hey you
Janet: /hey/

3) extension, same morphemes, in same order, with others in addition:

sibling model: I love it.
Janet: I love it too.

4) expansion, 50% or more of the model maintained in the imitation, but transformed, possibly more morphemes added:

sibling model: I like those flowers.
Janet: /ay lɛv dæt fæwerz/

A count was made of the times the child elicited repititions from others using "what," "huh," or similar utterances. Score was also kept on the fully audible but unintelligible utterances. "Unintelligible" is defined as requiring clarification by the listener, obtaining no response when obviously intended to do so, or utterances self-corrected by various means.

DISCUSSION

Begging the question of "how" the child learns to imitate for the moment, one can fairly frequently observe the nurturing adult teaching the infant vocal imitation. He establishes

eye contact with the infant (Jaffee, Stern & Peery 1973), often holding the child in a position where this is maximally possible, and the adult proceeds himself to imitate the child's vocalizations by way of prolonging them. The English speaking adult may often be observed to embark on a phonological inventory quite foreign to that of his typical speech. He may focus on a set or pattern abstracted from the child's output. Continued production by the child is rewarded with various signs of the adult's satisfaction. When adult imitation of infant vocalization finally elicits the reward of a return in kind, we might say that the first stage of imitation of vocal behavior has been achieved. This stage is followed by one in which the English speaking adult gives names to the persons and obejcts of the infant's environment. Finally, imitation of the model words will be directly solicited and tested for a certain degree of phonological accuracy. Needless to say it cannot be suggested that all nurturing adults perform in this way--but possibly even this accounts for the marked difference among children in exhibiting the tendency to imitate in the language acquisition process.

Jennifer, the elder sibling of this study, had seen such adult behavior toward Janet. Jennifer herself has been observed to elicit imitations from the infant, and during the period in question she frequently supplied names for objects for Janet's benefit. Less frequently she elicited the repetition of specific words. Her role as eldest child does include that of parent-sibling mediator and sibling controller as described by Bernstein.

Jennifer has shown herself to have both active and passive roles in Janet's acquisition of language. She will perform an occasional syllable build-up drill for Janet where she breaks down multi-syllabic sequences, demanding repetition:

adult: they're opera glasses
Jennifer: opera glasses?
adult: opera...glasses
Jennifer: opera glasses
say 'opera' (to Janet)
Janet: apɛdə
Jennifer: 'apɛdə' (imitating Janet's pronunciation)
opera
Janet: apɛdə
Jennifer: ap
Janet: ap
Jennifer: rə
Janet: wə
Jennifer: glasses
Janet: gw æsɨs
Jennifer: opera glasses
Janet: apəmgw æsɨs

Janet has not yet been observed to use this phrase spontaneously. Probable source for the drill technique is the mother of the children.

Requests for repetition by any of the participants in this data were rare. (Only 0.12% of Janet's utterances were elicitation of repetition.) One particular "drill" though has been repeated for several months and demonstrates that Jennifer is aware of Janet's incremental progress in handling a three morpheme string upon demand.

Jennifer: say "I"
Janet: /ay/
Jennifer: love
Janet: /yəv/~/ləv/~/ləf/
Jennifer: I love you
Janet: /ay-u:/

Giggles generally follow from both participants, though Janet

refuses to repeat the performance until some time has passed.

Jennifer is apparently largely unaware of her passive role as model for Janet's vocal imitations, though there are a growing number of objections on her part when Janet, by imitating requests or answers, thereby includes herself in Jennifer's activity without invitation.

The present study is designed to determine the circumstances under which the greatest number of imitations take place. Data indicate that the physical environment for the maximum number of imitations is quite specific. Imitations are found to be most frequent in the presence of the elder sibling (to the exclusion of other children), and from one to four familiar adults. Alone with Jennifer, while playing, Janet's verbal output tends to be short statements of possession, agression, crying, play monologues, or silence. Imitations are maximal when the children engage in limited physical activity in a restricted area--eating dinner out, planting seedlings while seated at a table, in a car, or the two riding in the same grocery cart. Imitations are maximal when the children are engaged in relatively novel or infrequently performed activity. Imitations are minimal when Janet is totally ignorant of the activity at hand, or conversely, when the activity is a matter of very familiar daily routine.

Janet's speech was approximately 15.8% of the total speech transcribed in one 30 hour period. Tabulation of the analysis of her transcribed speech ran as follows.

Table 1
Percentage of Imitations in the Affective Mode

	Repetition	Reduction	Extension	Expansion
Immediate	0.61	0.31	0.07	0.15
Delayed	1.00	0.31	0.00	0.45
Total:	1.61	0.62	0.07	0.60

Janet tended to repeat after herself with 0.38% of her exact repetitions being immediate echoes of her own remarks; 0.77% of her remarks were delayed echoes. All reductions in the affective mode were after herself. Extensions were rare. She expanded on her own remarks only after a delay, seemingly when it was obvious that her previous remark had failed.

Table 2
Percentage of Imitations in the Social Mode

	Repetition	Reduction	Extension	Expansion
Immediate	0.30	0.07	0.00	0.00
Delayed	0.07	0.00	0.00	0.00
Total:	0.37	0.07	0.00	0.00

In the social mode, exact repetitions were most frequent with 0.23% occuring immediately after the model. Note that 1.08% of Janet's speech were occasions of novel and voluntary items in this mode (see Table 7).

Table 3

Percentage of Imitations in the Intellectual Mode

	Repetition	Reduction	Extension	Expansion
Immediate	7.62	4.01	0.07	2.09
Delayed	3.57	2.25	0.07	1.00
Total:	11.19	6.26	0.14	3.09

For Janet the majority of imitations occured in the intellectual mode; the majority of these were in the form of exact repetitions. Of these, 4.9% were echoes of herself with 6.29% imitations of another. Both of these figures contain sequences where the originally imitated word was echoed, sometimes chanted, eventually out of context. The word /nakɛnɛrs/, 'binoculars' was heard several times during the 30 minute period following Jennifer's identifying of the item for Janet and her requesting one repetition. In this data 0.12% of Janet's speech consisted of repetition at the request of another. She herself elicited repetitions from others 1.40% of the time.

Table 4

Percentage of Novel Utterances Using the Theme Word

Affective	0.07
Social	0.00
Intellectual	4.51
Total:	4.58

Only 4.58% of Janet's speech consisted of novel utterances which used the topic or theme word of the conversation in syntactic structures other than those categories of imitation.

Table 5

Percentage of Novel Utterances Introducing New Theme Word

Affective	5.91
Social	1.08
Intellectual	21.47
Total:	28.46

With the greatest proportion of utterances introducing a new theme word, this category reflects Janet's relatively short attention span and her propensity to change the subject as she sees fit.

Table 6

Yes/No Answers to Questions

Yes	13.54
No	5.44
Total:	18.98

These extended categories of the speech act mode, when correlated with types of morpho-syntactic change in the process of imitation, give a different reading than does the Bloom study to what is most likely to be a similar data base. The 'when' of this study focuses on the speech act occasion; the 'when' of the Bloom study focuses on the "lexical and grammatical conditions that accompanied imitation." As the

greatest number of imitations occurred in the speech mode coded as 'intellectual,' we can posit that imitation is closely tied to a cognitive process—one possibly but not necessarily—involved in the acquisition of syntax.

Bloom found that "children imitated neither linguistic signals that were already well known to them nor structures that were completely absent from their own spontaneous speech." This was not supported in the data studied here. Much of the linguistic environment imitated had been previously noted in spontaneous speech, possibly because nearly all of the imitations were after the sibling model. Also, while not specifically tabulated, there are notable instances where structures were imitated which did not occur in the non-imitative speech of the child. While Janet's MLU was 1.5, the MLU of her repetitions was 1.5, her reductions 1.8, her expansions 2.6, and her extensions, 2.0.

The above tabulations are summarized for comparison in the following table.

Table 7

Rank Order of Selected Utterance Types in Percent of the Child's Verbal Output

Novel Utterances Introducing New Theme Word		28.46
Imitations (all types)		23.12
Intellectual: New Theme Word		21.47
Uninteligible Utterances		21.16
Yes/No Answers		18.98
Intellectual: Repetition	11.19	(Imitation)
Intellecutal: Reduction	6.26	(Imitation)
Affective: New Theme	5.91	(Novel)
Intellectual: Theme Word	4.51	(Novel)
Intellectual: Expansion	3.09	(Imitation)
Affective: Repetition	1.61	(Imitation)
Elicitation of Repetition	1.40	(Novel)
Social: New Theme	1.08	(Novel)
Affective: Reduction	0.62	(Imitation)
Affective: Expansion	0.62	(Imitation)
Social: Repetition	0.37	(Imitation)
Requested Repetition	0.12	(Novel)
Social Reduction	0.07	(Imitation)
Affective: Theme Word	0.07	(Novel)
Affective: Extension	0.07	(Imitation)

CONCLUSION

The Bloom conclusion that the child takes an active role in his language development by imitating from the linguistic environment is supported here. This study further suggests that the imitating child will tend to do so more in the intellectual mode as defined here than in the social or affective modes.

Piagetian theory (1962) accounts for two distinct stages of imitation: the early sensorimotor imitation of perceived models which takes place during the first two years, and the subsequent stage of representative imitation—

the imaged representation of a model prior to actual representation of it--which continues until around seven years of age. Piaget however, does not recognize the child as having language competence until after about seven, i.e., he has been incapable of real dialogue, discussion, or knowledgeable search for explanations. Piaget based his conclusions on testing for storytelling and use of explanations about operation of mechanisms; he excluded knowledgeable self-expression and appeal to conversants as non-spontaneous speech on behalf of the child.

The Guillaume theory (1968) of childhood imitation is more compatible with the findings of this study. For Guillaume, to imitate is not to act like another, but to seek the same result. The child first seeks the result obtained by another by using his own means, and thereby finds himself performing the same action as that of his model. Merleau-Ponty (1973), in extending the Guillaume theory of imitation points out that vocal imitation is monitored by hearing and,

> the child reproduces new sounds by assimilating them to those that he has already spoken...carrying oneself by one's own means toward the goal (of heard speech). The child imitates as he goes along, not by following the model point by point, but by carrying himself toward a global result.

Can we assume that the child is capable of imaging representation of a model in the Piagetian sense, of analyzing and abstracting the productive features of the component actions, of sequencing them, and then of producing an imitation?

These two theories share a common point of origin as they both assume that there is no sense of differentiation in the young child between self and others. For Piaget the child develops and he discovers others. For Guillaume, the child develops and finds himself.

In conclusion we turn to an empirical study of adult speech to suggest a further explanation of the necessity of imitation in child language, the study Psycholinguistics (Experiments in spontaneous speech) by F. Goldman-Eisler (1968). This study approaches speech as mentation in the Hughlings Jackson sense. The methodology of these experiments was basically one of measuring the relative efficiency of adult speech when the subjects were responding to environmental stimuli. The results were:

> a) for any given capacity, time and tonus, the latter understood as a condition of readiness and manifesting itself as effort, are the basic conditions for effective thinking; that there are functions and aspects of the neuro-physiology and body chemistry of the thinking organism as it responds to stimulation from the environment.
> b) time is an entity actively made by the organism as well as granted to it, the latter being an external condition, the former a function of tonus.

Goldman-Eisler further observed that time—time being a necessary though not sufficient condition for the deployment of optimal cortical tonicity, that is cognitive efficiency—time needs to be made during spontaneous speech in order for the speaker to successfully render a vocalization which he feels is optimally efficient for his message. It is suggested here that the imitating child in part uses

imitation to 'make time' for the processing of linguistic and non-linguistic input from the environment.

In summary, imitation in the speech of the child serves at least three functions in the development of linguistic competence. Imitation provides auditory feedback for phonological and morpho-syntactic accuracy, produces a model for verification and/or clarification by speakers, and, imitation 'makes time' for the processing and acquisition of information. Beyond these functions however, imitation after the sibling model is different from imitation after the adult model. The second child is provided with a model of speech act behavior appropriate not only for the situation at hand, but for the child participant. We have seen the child imitate linguistic forms he does not possess—apparently in confidence that he wants the same result as his model obtained. Imitation for the second child is oriented more toward achievement of the same goal and overall, it results in less direct linguistic experience for him. He acquires features of language behavior before he masters those of linguistic form, thereby appearing to reach a stage of language competence earlier than does the first-born.

References Cited

Bernstein, B. A sociolinguistic approach to socialization; with some reference to educability. In J. J. Gumperz & D. Hymes (Eds.) Directions in Sociolinguistics. New York: Holt, Rinehart & Winston, 1972, Pp. 465-497.

Bloom, L., Hood, L., & Lightbrown, P. Imitation in language development: if, when, and why. Cognitive Psychology, 1974, 6, Pp. 380-420.

Breland, H. M. Birth order, family configuration, and verbal achievement. Child Development, 1974, 45, Pp. 1011-1019.

Bruner, J. S. The ontogenesis of speech acts. Journal of Child Language, 1975, 2, Pp. 1-19.

Cicirelli, V. G. The effect of sibling relationship on concept learning of young children taught by child-teachers. Child Development, 1972, 43, Pp. 282-287.

Cicirelli, V. G. Relationship of sibling structure and interaction to younger sib's conceptual style. Journal of Genetic Psychology, 1974, 125, Pp. 37-49.

Davis, E. A. The development of linguistic skills in twins, singletons with siblings, and only children from age five to ten years. University of Minnesota Press: Institute of Child Welfare Monograph Series No. 14. 1937

Day, E. J. The development of language in twins. Child Development, 1932, 3, Pp. 179-199; 298-316.

Ervin-Tripp, S. Imitation and structural change in children's language. In E. H. Lenneburg (Ed.) New directions in the study of language. Cambridge, MA: MIT Press, 1964, Pp. 163-189.

Fraser, C., Bellugi, U., & Brown, R. Control of grammar in imitation, comprehension and production. Journal of Verbal Learning and Verbal Behavior, 1963, 2, Pp. 121-135.

Goldman Eisler, F. Psycholinguistics (Experiments in Spontaneous Speech). London: Academic Press.

Guillaume, P. Imitation in children. E. P. Halperin (Tr.) Chicago: University of Chicago Press, 1971.

Jaffee, J., Stern, D., & Peery, C. "Conversational" Coupling of gaze behavior. Journal of Psycholinguistic Research, 1973, 2 (4), Pp. 321-333.

Kemp, J. & Dale, P. Spontaneous imitation and free speech: a developmental comparison. Paper presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, April, 1973.

Leonard, L. B. & Kaplan, L. A note on imitation and lexical acquisition. Journal of Child Language, 3, Pp. 449-455.

Merleau-Ponty, M. Consciousness and the acquisition of language. H. J. Silverman (Tr.) Evanston, Ill.: Northwestern University Press, 1973.

Morley, M. E. The development and disorders of speech in childhood. Baltimore: Williams & Wilkins, 1965.

Piaget, J. The language and thought of the child. 1926, Revised Edition, 1959, London: Routledge and Kegan Paul.

Piaget, J. Play, dreams and imitation in childhood. New York: W. W. Norton, 1972.

Rosenberg, B. G. & Sutton-Smith, B. Sibling association, family size, and cognitive abilities. Journal of Genetic Psychology, 1966, Pp. 109; 271-279.